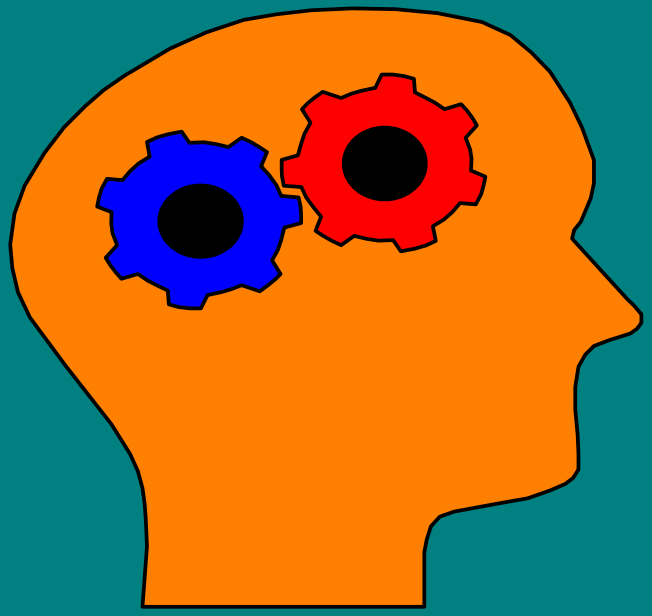
SEIZURE DISORDERS



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DEFINITIONS

- *Seizure - an uncontrolled paroxysmal discharge of the CNS that interferes with normal function.*
- *Epilepsy - repeated occurrence of any of the various forms of seizures.*
- *Prodrome - Mood or Behavior change that precedes a seizure.*

DEFINITIONS

- *Aura - Localized symptom that may be the first part of a seizure.*
- *Tonic - A sustained muscular contraction.*
- *Clonic - Intermittent muscular contractions and relaxation.*

INCIDENCE

- *Between 0.3 and 0.7% of the U.S. population.*
- *>200,000 Americans have a seizure more than once a month.*
- *Prevalence - Highest in children between 2 & 5yrs and at puberty.*
- *Incidence - of first time seizures increases significantly over 50 y.o.*

PATHOPHYSIOLOGY

- *A seizure is a temporary involuntary disturbance of brain function that may be manifested as impaired consciousness, abnormal motor activity, sensory disturbances or autonomic dysfunction*

PATHOPHYSIOLOGY

- *Seizures are accompanied by abnormal electrical discharges in the brain that can usually be detected by electroencephalography.*
- *Not a disease but a symptom.*
- *Common Denominator - increased permeability of neuronal cell membranes causes an increase in neuronal cell excitability.*

PATHOPHYSIOLOGY

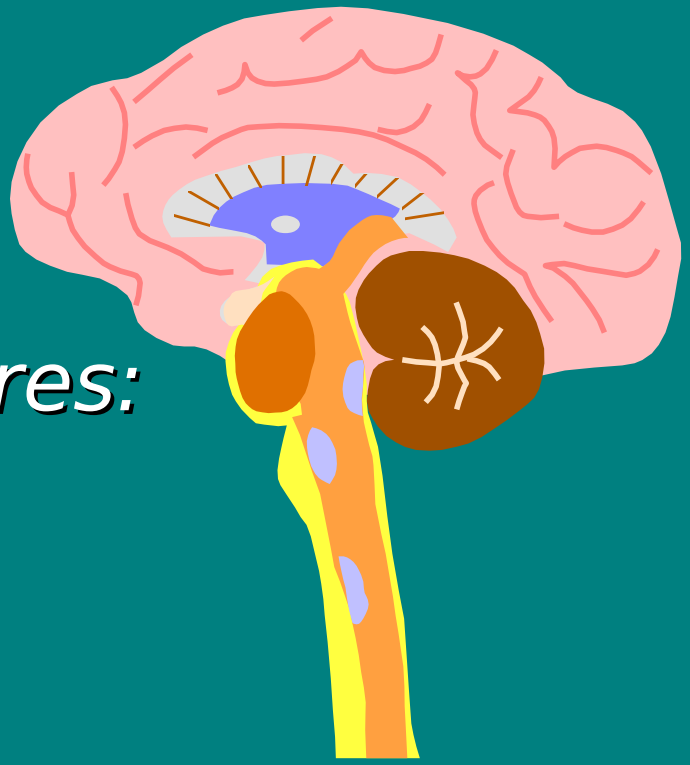
- *Things that can cause membrane instability:*
  - *Deficiency in Oxygen*
  - *Deficiency in Glucose*
  - *Decrease in Calcium*

CLASSIFICATION

- *Of all patients with epilepsy, 70% have only one type of seizure disorder whereas the remaining 30% have two or more types.*

CLASSIFICATION

- *Partial Seizures:*
  - *Simple*
  - *Complex*
- *Generalized Seizures:*
  - *Tonic-clonic*
  - *Myoclonic*
  - *Atonic*
  - *Absence seizures (petit mal)*



CLASSIFICATION

- *Febrile seizure:*
  - *type of generalized tonic-clonic*
  - *occur in 2-5% of the US population.*
  - *usually no medication*
- *Status epilepticus:*
  - *most often a generalized tonic-clonic*
  - *associated risks*

CAUSES

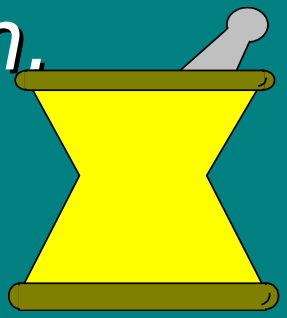
- *Adult-Onset Epilepsy most often indicates the presence of a structural lesion of the brain.*
- *Primary (genetic epilepsy) - 65% of persons with recurrent seizures.*

CAUSES

- *Secondary (acquired epilepsy) - 35% of persons with recurrent seizures.*
- *Most common secondary causes:*
  - *Congenital abnormalities*
  - *Perinatal Injuries*
  - *Metabolic and Toxic Disorders*
  - *Head Trauma*
  - *Tumors*
  - *Vascular Disease*
  - *Degenerative Disorders*
  - *Infectious Diseases*

MANAGEMENT

- *Based on minimizing or preventing the recurrence of acute seizures.*
- *Because several drugs are equally effective for controlling seizures, adverse effects, age, gender and cost all become factors in medication selection.*

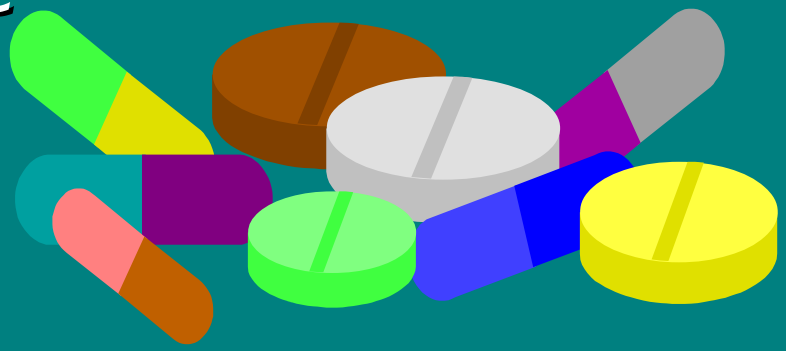


MANAGEMENT

- *Patients who have seizures typically take a single medication in dosages sufficient to maintain therapeutic concentrations.*
- *Dosage is individualized - some patients develop toxicity at lower concentrations.*

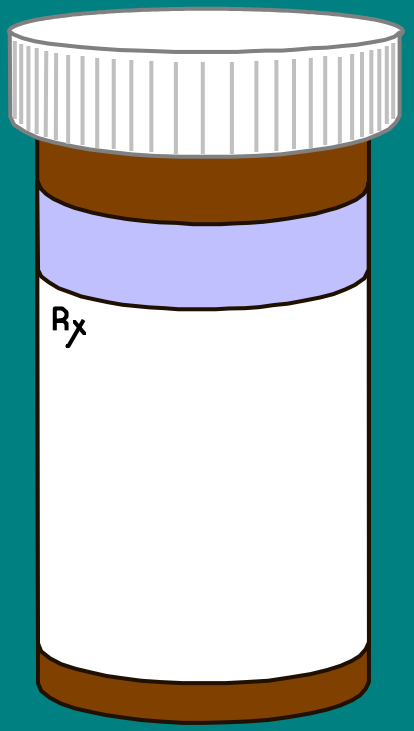
MEDICATIONS

- *Phenytoin - one of the best tolerated anticonvulsants.*
- *Carbamazepine*
- *Valproic acid*
- *Barbiturates*
- *Succinimides*
- *Benzodiazepines*



MEDICATIONS

- *Newer anticonvulsants:*
  - *Lamotrigine*
  - *Gabapentine*



PREDISPOSING FACTORS

- Fatigue
- Decreased physical health
- Alcohol ingestion
- Emotional stress
- Flashing lights
- Menstrual cycle
- Missed meals

PREDISPOSING FACTORS

- *Overall risk of death among epileptics ranges from that of the general population to a rate of 200% or greater.*

MEDICAL CONSIDERATIONS

- *The first step in management of an epileptic dental patient is identification.*
- *A thorough med. hx is key. <u>Questions:</u>*
  - *What medications are you taking?*
  - *What type of seizure do you have?*
  - *How often do you have a seizure?*
  - *What signals the onset of your seizure?*
  - *How long do your seizures last?*
  - *Have you ever been hospitalized?*

MEDICAL CONSIDERATIONS

- *The office staff must be sensitive to the embarrassment that many individuals feel after a seizure.*
  - *partial loss of memory*
  - *incontinent*
  - *deep sleep*
  - *loss of consciousness*
  - *musculoskeletal contractions and relaxations*

MANAGEMENT

- *Terminate the dental procedure.*
- *Protect the patient from further injury.*
- *Open the airway / administer oxygen.*
- *Obtain vital signs.*
- *Activate the EMS.*
- *Anticonvulsant medications I.V.*

DENTAL CONSIDERATIONS

- *Fixed vs removable*
- *Complete metal units*
- *Acrylic facings on anterior crowns*

DENTAL CONSIDERATIONS

- *Gingival hyperplasia - secondary to phenytoin (dylantin) therapy.*
- *Younger patients > Adults.*
- *Men and women equally affected.*
- *Poor oral hygiene.*

DENTAL CONSIDERATIONS

- *Gingival areas affected, in order of severity, are:*
  - *facial surfaces of the maxillary anteriors;*
  - *facial surfaces of the mandibular anteriors;*
  - *buccal surfaces of the maxillary posteriors;*
  - *buccal surfaces of the mandibular posteriors;*
  - *Lingual surfaces affected to a lesser degree.*

DENTAL CONSIDERATIONS

- *Gingival hyperplasia - may lead to delayed eruption of the teeth, misalignment, and food retention.*
- *If the hyperplasia interferes with oral function or esthetics, gingivectomy should be performed.*
  - *Placement of a positive-pressure appliance.*
  - *Frequent recall to ensure good OH.*

CONCLUSION

- *Patients with seizure disorders may be treated in the private dental setting. A thorough medical history should tell you*
  - *what type of seizures the patient has;*
  - *how well the seizures are controlled;*
  - *the frequency and duration of seizures;*
  - *what might trigger a seizure;*
  - *what to expect when the patient has a seizure.*

DIFFERENTIAL DIAGNOSIS

- *Epilepsy*
- *Local Anesthetic Overdose Reaction*
- *Hyperventilation*
- *Cerebrovascular Accident*
- *Hypoglycemic Reaction*
- *Syncope*

QUESTIONS ?